Module 6

Managing Environmental Issues

September 30, 2009 **8:00 – 12:00**

NUCLEAR EXECUTIVE
LEADERSHIP TRAINING

NUCLEAR EXECUTIVE LEADERSHIP TRAINING

Managing Environmental Issues

Andrew Lawrence
Office of Nuclear Safety, Quality Assurance and Environment

Andrew Lawrence is the Director of the Office of Nuclear Safety, Quality Assurance and Environment within the Office of Health, Safety, and Security. In this position he is responsible for establishing nuclear safety, quality assurance and environmental protection requirements and expectations for the Department for quality assurance, for the protection of workers and the public from the hazards associated with nuclear operations, and for the protection of the environment from the hazards associated with all Department operations. He is responsible for representing the Department in coordinating with other Federal agencies on major environmental initiatives including environmental sustainability, green house gas reduction and application of environmental management systems to Federal activities. He provides assistance to field elements in implementation of policy and resolving nuclear safety, quality assurance and environmental protection issues.

Prior to his current assignment, he was the Deputy Assistant Secretary for Environment in the Department of Energy's (DOE) Office of Environment Safety and Health (EH) from May 2003 to October 2006. In this position he was responsible for establishing DOE-wide policies and guidance for public, environmental and radiation protection, for compliance with external regulatory requirements, and for National Environmental Policy Act and related environmental review requirements and implementation. He provided corporate leadership in promoting environmental protection through interaction with internal and external entities, advocating the Departmental position on emerging environmental requirements affecting DOE operations and issuance of guidance on Departmental compliance with newly promulgated requirements. He played a lead role in promoting the implementation of environmental management systems throughout the Department to ensure that consideration of the environmental impacts of DOE operations in all aspects of DOE program and project planning and implementation as well as promoting pollution prevention by establishing continuous improvement goals and tracking and reporting on DOE progress thereon.

Mr. Lawrence has worked at DOE/EH and HS since 1990 and has also served as the Director, Office of Environmental Policy and Guidance, the Associate Deputy Assistant Secretary for Health Studies, and the Director of the Compliance Strategies Division. In these positions, his responsibilities have ranged from (1) providing corporate support to program and field elements in the interpretation and implementation of statutory and emerging regulatory environmental requirements and resolution of complex-wide and significant site-specific compliance issues, to

(2) developing DOE policies, study designs, and programs focused on obtaining, analyzing and communicating health information related to the prevention of injury and illness in the DOE workforce.

Prior to joining DOE, Mr. Lawrence had experience in supporting EH as a support contractor. He was also the Director of the Environment Office of the U.S. Synthetic Fuels Corporation and the manager of Dames and Moore's Environmental Regulations Service.

Eric Cohen
Office of NEPA Policy and Compliance

Mr. Cohen is the Western Energy and Waste Management Unit Leader in the Office of NEPA Policy and Compliance (GC-20). He has worked in the NEPA Office since 1990, primarily supporting the Offices of Environmental Management, Civilian Radioactive Waste Management, Fossil Energy, and Energy Efficiency and Renewable Energy. Mr. Cohen contributed substantially to major NEPA guidance products issued by the Department, and is a primary author of *Recommendations for Analyzing Accidents under the National Environmental Policy Act*. In addition, he worked on many of the Department's major programmatic and sitewide environmental impact statements.

Before coming to DOE, Mr. Cohen worked in various technical program and environmental compliance positions for the U.S. Environmental Protection Agency (EPA), the U.S. Air Force, and the Illinois Environmental Protection Agency. While at EPA, Mr. Cohen served as the Coordinator for the Innovative and Alternative Wastewater Technology Program. As a civilian environmental engineer, he was the Restoration Program Manager for the Air Force's Systems Command.

A Registered Professional Engineer, Mr. Cohen holds a B.A. in Chemistry and Biology from McDaniel College and an M.S. in Environmental Science in Civil Engineering from the University of Illinois.

Andrew Wallo III
Office of Nuclear Safety, Quality and Environment

Andrew Wallo is the Deputy Director of the Office of Nuclear Safety, Quality Assurance and Environment within the Office of Health, Safety, and Security. In this position he is responsible for assisting in establishing nuclear safety, quality assurance and environmental protection requirements and expectations for the Department to ensure protection of workers and the public from the hazards associated with nuclear operations, and protection of the environment from the

hazards associated with all Department operations. He provides assistance to field elements in implementation of policy and resolving nuclear safety and environmental protection issues.

Prior to his current assignment, Mr. Wallo was the Director of the Office of Air, Water and Radiation Protection Policy and Guidance within the Department of Energy's Office of Environment. His Office was responsible for activities that range from the development of DOE directives for radiation protection of the public and environment to guidance on environmental issues including protection of air, water, biota and cultural resources at DOE facilities. Responsibilities also included the DOE lead for coordinating with other Federal agencies and groups representing the States on environmental protection issues including work with other agencies on the development of protective action guidance for radiological emergencies, Federal radiation protection guidance and implementation of Environmental Management Systems.

Mr. Wallo is the DOE representative to the Interagency Steering Committee on Radiation Standards (ISCORS) and is the U.S. representative to the Waste Safety Standards Committee of the International Atomic Energy Agency (IAEA). Mr. Wallo also serves as the EH representative to the DOE Federal Low Level Waste Review Group (LFRG) and the DOE Federal TRU Waste Review Group (TRUFRG). He has represented DOE on a number of the Conference of Radiation Control Program Directors (CRCPD) working groups on waste management and radiation protection and is or has served as a member or consultant to a number of NCRP (National Council on Radiation Protection and Measurement), ANSI (American National Standards Institute), and IAEA working groups and committees on radioactive waste, waste security, and residual radioactive material control and release and the Office of Science and Technology working groups on response to radiological and nuclear incidents.

Mr. Wallo is a Health Physicist and is a principal author of numerous DOE directives and guides including DOE 5400.5, Radiation Protection for the Public and Environment. Prior to joining the DOE Office of Environment in 1990, he worked for 3 years as the site designation and certification manager for remedial actions in the Department of Energy's Office of Nuclear Energy.

Before joining DOE, Mr. Wallo was project engineer and senior health physicist for 9 years at The Aerospace Corporation's Eastern Technical Division located in Washington, DC and supported numerous Department of Energy and Nuclear Regulatory Commission Projects. From 1971 to 1978, Mr. Wallo was employed by MITRE Corporation, as an environmental physicist, developing and implementing environmental monitoring and measurement systems in conducting analyses to support the development of and evaluation of environmental control technology and energy systems for EPA and ERDA.

Managing Environmental Issues

Andy Lawrence
Eric Cohen
Andrew Wallo
September 30, 2009

Overview

Environmental Management Systems: Managing the Environmental Aspects of DOE Activities
Andy Lawrence

National Environmental Policy Act (NEPA) Compliance
Eric Cohen

Radiation Protection of the Public and Environment & Radiological Control and Release of Property
Andrew Wallo

NUCLEAR EXECUTIVE LEADERSHIP TRAINING

Environmental Management Systems: Managing the Environmental Aspects of DOE Activities

Andy Lawrence

Overview

NUCLEAR EXECUTIVE LEADERSHIP TRAINING

- Environmental Management Systems
- Sustainable practices for environmental stewardship
- DOE progress to date
- Green Building (new and existing)
- Coming Challenges
- Regulatory Compliance

Environmental Management Systems Overview

NUCLEAR EXECUTIVE LEADERSHIP TRAINING

Environmental Management Systems provide the framework:

- For managing the *Environmental Aspects* of DOE Activities
- For implementing *Sustainable Practices* required by DOE Orders
- For achieving *Departmental Goals* established in DOE Orders
  - Sustainable Environmental Stewardship
  - Green Buildings
  - Energy and Water Conservation
  - Fleet Management
- For managing *Regulatory Compliance*

Environmental Management Systems

NUCLEAR EXECUTIVE LEADERSHIP TRAINING

- An Environmental Management System (EMS) is a systematic and structured approach for addressing environmental consequences of an organization's activities, products and services.
- DOE is implementing almost 50 EMSs complex-wide.
- EMS is required to be integrated into the organization's Integrated Safety Management System
- EMS is required at DOE sites by DOE Order 450.1A, (implementing requirements of Executive Order 13423 and the prior EO 13148).

Why Have an Environmental Management System?

NUCLEAR EXECUTIVE LEADERSHIP TRAINING

- EMS/ISMS provides an environmental protection program that ensures early detection of and systematic management of environmental problems.
- EMS/ISMS allows managers to integrate environmental considerations into everyday business processes and mission activities.
- Effective EMS/ISMS implementation can create an organizational culture of superior environmental performance through increased environmental awareness and life cycle accountability for everyone working at DOE sites.

Declaration that EMS is "Fully Implemented"

NUCLEAR EXECUTIVE LEADERSHIP TRAINING

DOE O 450.1A, required each existing EMS to be re-declared "fully implemented" by June 30, 2009

a) A formal audit of the EMS be conducted by a qualified party outside the scope of the EMS

b) The appropriate contractor senior management and DOE field office management recognize and address the findings of the audit

c) The appropriate senior managers declare that the EMS conforms to the EMS requirements of DOE O 450.1A

Declaration that EMS is "Fully Implemented" (cont'd)

- In addition, a formal audit by a qualified party outside the scope of the EMS must be conducted at least every three years
- 43 of 47 existing EMSs met the deadline; the remainder are on schedule for declaration by December (see list of EMSs beginning on p. 5-38)
- Several new EMSs are establishing schedules for implementation

Ongoing Implementation of EMS

- DOE O 450.1A requires DOE to use EMS as the management framework to implement, manage, measure, and continually improve upon, the sustainable environmental, energy, and transportation practices and goals of EO 13423
- DOE reports annually on the ongoing implementation of EMS at DOE sites
- EMS implementation (and continual improvement) is one of the elements tracked as part of the Office of Management and Budget's Environmental Stewardship Scorecard.

DOE's Environmental and Energy Goals

NUCLEAR EXECUTIVE LEADERSHIP TRAINING

Environmental:

DOE O 450.1A *Environmental Protection Program*

- establishes (new) EMS requirements
- establishes (new) goals and addresses specific sustainable environmental practices for achieving goals

DOE's Environmental and Energy Goals (cont'd)

NUCLEAR EXECUTIVE LEADERSHIP TRAINING

Energy:

DOE O 430.2B *Departmental Energy, Renewable Energy and Transportation Management*
(issued February 2008)

- addresses key elements of the Department's TEAM Initiative
- establishes goals for energy and water conservation and fleet management
- states that these programs are to be implemented through the site EMS

Sustainable Practices

Many Sustainable Practices are identified in DOE O 450.1A and DOE O 430.2B, for:

a. Energy and water conservation, greenhouse gas emissions avoidance or reduction, and petroleum products use reduction

b. Renewable energy, including bio-energy

c. Water conservation

d. Acquisition of environmentally preferable products (such as recycled content, bio-based content, and energy efficiency)

e. Reduction or elimination of acquisition and use of toxic or hazardous chemicals; pollution and waste prevention; and recycling

f. High performance construction, lease, operation, and maintenance of buildings

g. Vehicle fleet management

h. Electronic equipment acquisition, management, disposal

Sustainable Practices Enable DOE to Meet Our Goals

- The sustainable environmental stewardship goals of DOE O 450.1A are performance-based requirements for site-specific objectives and measurable targets at each DOE site's EMS (i.e., no numerical or percentage reduction requirements are included).
- Based on the EO, the energy goals of DOE O 430.2B are more prescriptive, and energy-related sustainable practices (e.g., for renewable energy or fleet management) must be designed accordingly.

DOE Energy and Water Goals – DOE O 430.2B

NUCLEAR EXECUTIVE LEADERSHIP TRAINING

- Reduce energy intensity by no less than 30 percent by FY 2015 on average
- Reduce potable water use by no less than 16 percent by FY 2015
- Install advanced electric metering systems and standard steam, natural gas, and water metering systems
- Install on-site renewable energy generation

DOE Energy and Water Goals – DOE O 430.2B (cont'd)

NUCLEAR EXECUTIVE LEADERSHIP TRAINING

- Attain the U.S. Green Building Council's Leadership in Energy and Environmental Design (LEED) Gold certification for all capital asset new construction and major building renovations
- Incorporate sustainable building requirements in at least 15% of existing DOE facilities by 2015
- Ensure all alternative fuel vehicles operate on alternative fuels to greatest extent practicable

DOE Sustainable Environmental Stewardship Goals – DOE O 450.1A

NUCLEAR EXECUTIVE LEADERSHIP TRAINING

- DOE O 450.1A sustainable environmental stewardship goals address:
  - Pollution Prevention
  - Toxic Chemical Use and Release Reduction
  - Environmentally Preferable Purchasing
  - Electronic Stewardship
  - Post-Consumer Material Recycling
- Goals are to be achieved by sites through integration with sites' EMSs.

DOE Sustainable Environmental Stewardship Goals– DOE O 450.1A (cont'd)

NUCLEAR EXECUTIVE LEADERSHIP TRAINING

DOE sustainable environmental stewardship goals emphasize mission accomplishment as well as environmental protection

- Reduce environmental hazards, protect natural resources, and minimize future environmental legacies
- Avoid pollution-control costs, reduce regulatory recordkeeping and reporting burden, protect health of workers and the public, minimize mission liability
- Contribute to mission accomplishment in a sustainable, cost-effective, and environmentally responsible manner.

Stewardship Goals Build on Long-Standing Programs

NUCLEAR EXECUTIVE LEADERSHIP TRAINING

- Pollution Prevention Act of 1990, National policy hierarchy:
  - *prevent* first
  - *recycle*
  - *treat/dispose* last
- Previous *Greening the Government* EOs 13101 and 13148 established Federal leadership role, with pollution prevention goals for waste reduction, recycling, and procurement of environmentally preferable products

DOE's Environmental Sustainability Scorecard

NUCLEAR EXECUTIVE LEADERSHIP TRAINING

	'05	'06	'07	'08
Environmental Management Systems				
Green Procurement				
Green Building				
Electronics Stewardship				
Total				

DOE Green Building Policy

New Construction:

- All new building construction projects required to comply with the Guiding Principles
- Building projects over $5M (new construction and major renovation) required to achieve LEED Gold certification

DOE Green Building Policy (cont'd)

Leasing:

- DOE established a preference for LEED Gold when seeking new leased space
  - If LEED Gold is not available, preference for LEED Silver, and then Certified
  - If none, then space conforming to the Guiding Principles for High Performance and Sustainable Buildings is preferred
  - DOE communicated this preference to GSA
- DOE is incorporating LEED and Guiding Principle preferences into lease renegotiations

Greening New Buildings – LEED Projects

- DOE has 20 LEED certified buildings [December 2008]
  - 2 LEED Platinum
  - 2 LEED Gold
  - 7 LEED Silver
  - 9 LEED Certified
- DOE also has 37 LEED registered buildings (under construction) [February 2009]

Greening Existing Buildings: 15% by 2015

- Three reasons why the 15% by 2015 goal is the most challenging requirement of EO 13423:
  - We have relatively few new buildings in the pipeline; compliance will require addressing our existing inventory
  - We have minimal experience in "greening" existing buildings; lack of metrics, practical knowledge
  - Integrating sustainability is a group effort; multiple parties must be involved to achieve success
- Success requires a multi-year, multi-party effort

Coming Challenges

Some coming challenges for DOE include:

- Incorporating EMS requirements in all appropriate contracts
- Addressing requirements of the new Executive Order (currently being drafted)
  - Preparing greenhouse gas inventories for each DOE site (in conjunction with EPA rulemaking)

Incorporating EMS Requirements in all Appropriate Contracts

- We are working with several sites to ensure that large construction projects are covered by an appropriate EMS
- We are working with DOE programs to identify activities which may not yet be covered by an EMS

New Executive Order

- The Council on Environmental Quality and the Office of Management and Budget are currently drafting a new Executive Order
  - It will build on the current EO 13423
  - Scheduled for issuance in September
- We expect that the new EO will include:
  - A requirement for a greenhouse gas inventory for each Federal agency for FY2010
  - Explicit (and ambitious) GHG reduction goals
- In anticipation of the new Executive Order, it would be prudent to start collecting the information needed for the FY2010 GHG inventory for your site or organization

Greenhouse Gas Emission Inventory

GHG Inventory Categories:

- Scope 1 direct emissions, such as
  - Fuel combustion
  - Government-owned vehicles
  - Fugitive emissions
- Scope 2 indirect emissions, such as
  - Purchased electricity
  - Purchased steam
- Scope 3 indirect emissions, such as
  - Employee commuting
  - Employee business travel
  - Waste disposal
  - Outsourced activities
  - Production of purchased materials

Administration Goals for Greenhouse Gas Reductions

- The President's National Objectives for DOE – Energy to Secure America's Future, include:

  "Reduce GHG emissions:
  drive emissions 20 percent below 1990 levels by 2020"

  [Source: briefing slides "Goals and Targets to Direct FY 2010 Budget and Stimulus"]

- Press reports suggest that in the new E.O.,

  "President Barack Obama is expected to order federal agencies next month to cut greenhouse gas emissions by 20 percent from 2010 levels within 10 years"

  [Source: *Federal Times*, August 10. 2009]

Environmental Compliance Improvement

DOE O 450.1A requires incorporation of environmental compliance management elements in EMS, including:

- Senior leadership commitment
- Clear responsibilities and accountability
- Implementation of environmental compliance audit and review program
- Checking and follow-up on audit results (root-causes of non-compliances tracked and addressed)

Environmental Compliance Management Improvement Audit and Review Program

- DOE sites required to implement an environmental compliance audit and management review program to:
  - Identify compliance deficiencies and root-causes of non-compliance
  - Ensure audit findings are tracked and addressed
- A DOE workgroup is identifying compliance audit, assessment, and review programs, including contractor assurance systems and oversight programs under DOE Order 226.1A, "*Implementation of Department of Energy Oversight Policy*"
  - Guides on Integration of Compliance Self Evaluation (O 226.1A) and Compliance Audit (O 450.1A) are under workgroup consideration

Notices of Violation and Fines

During the 14-month period ending July 2009, DOE sites:

- Received 24 Notices of Violation (NOVs) at 13 sites (compared with 35 NOVs at 17 sites in the prior year)
  - Hazardous Waste (18)
  - Water (4)
  - Air (2)
- Were assessed fines of $217,581 (compared with fines of $1,161,775 the prior year)

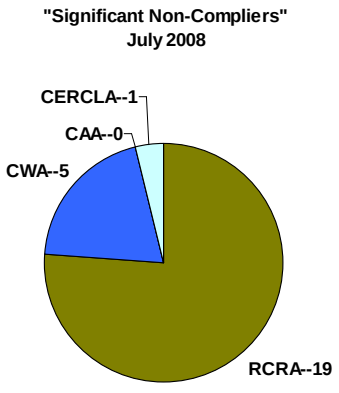
EPA's ECHO Database

- Enforcement and Compliance History Online (ECHO) is a Web-based tool that provides public access to compliance and enforcement information.
- ECHO contains data for: Resource Conservation and Recovery Act (RCRA), Clean Water Act (CWA), Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), and the Clean Air Act (CAA). ECHO is updated monthly.
- Anyone with access to the Internet can use ECHO.
- URL address is: http://www.epa-echo.gov/echo

DOE Sites Listed by EPA in "Significant Non-Compliance" (SNC)

Total of 28 listings, at 9 sites:

- EM (20 listings; 6 sites)
  - East Tennessee Technology Park (4 RCRA) *
  - Hanford Richland Operations (9 RCRA) (1CERCLA)
  - Paducah Gaseous Diffusion Plant (1 CWA)
  - Portsmouth Gaseous Diffusion Plant (2 RCRA and 1 CWA)
  - Savannah River Site (1 CWA)
  - Waste Isolation Pilot Plant (1 RCRA)
- NNSA (7 listings; 2 sites)
  - Los Alamos National Laboratory (4 RCRA)
  - Y-12 Plant (2 RCRA and 1 CWA) **
- NE (1 listing; 1 site)
  - Idaho National Engineering Laboratory (1 RCRA)



* Since 2/13/2006. Appears to have been resolved 4/22/2008 but never removed.
** Since 11/7/2005. Appears to have been resolved 2/26/2008 but never removed.

Data from ECHO 8/17/09

Training in Environmental Compliance and Sustainability

- Our office offers training – through NELT and other forums – in various aspects of
  - EMS
  - Sustainability
  - Compliance
- We support other DOE offices by peer reviewing environmental training offered by organizations such as:
  - National Training Center (HS)
  - Project Management training program (MA)

Conclusion

- The Department is a leader in implementing EMSs and sustainable practices
- The bar continues to be raised by OMB—we cannot rest on our laurels
- Greenhouse gas emissions will soon be a major new focus
- Internal audits of regulator compliance can help reduce enforcement actions
- Our office is available to assist you in establishing and improving your EMS and sustainability programs

Backup Slides –

Environmental Management Systems at DOE

EMSs at DOE – Environmental Management

Office of Environmental Management

- Hanford -- Richland Central Plateau Project
- Hanford -- Richland River Corridor Project
- Hanford -- Office of River Protection (ORP) Tank Farms
- Idaho Advanced Mixed Waste Treatment Facility (AMWTF)
- Idaho Cleanup Project
- Oak Ridge -- East Tennessee Technology Park
- Oak Ridge -- Radiochemical Development Facility (Bldg 3019)
- Oak Ridge -- TRU Waste Processing Center
- Paducah Site
- Portsmouth Gaseous Diffusion Plant
- Savannah River Site -- M&O Contractor
- Savannah River Site -- Security Contractor
- Waste Isolation Pilot Plant (WIPP)
- West Valley Demonstration Project (WVDP)

EMSs at DOE – NNSA

NUCLEAR EXECUTIVE LEADERSHIP TRAINING

National Nuclear Security Administration

Kansas City Plant

Lawrence Livermore National Laboratory (LLNL)

Los Alamos National Laboratory (LANL)

Nevada Test Site (NTS)

Pantex Plant

Sandia National Laboratories

Y-12 National Security Complex

Bettis Atomic Power Laboratory

Knolls Atomic Power Laboratory (KAPL)

Idaho Naval Reactors Facility

EMSs at DOE – Office of Science

NUCLEAR EXECUTIVE LEADERSHIP TRAINING

Office of Science

Ames Laboratory

Argonne National Laboratory (ANL)

Brookhaven National Laboratory (BNL)

Fermi National Accelerator Laboratory (FNAL)

Lawrence Berkeley National Laboratory

New Brunswick Laboratory (NBL)

Oak Ridge Institute for Science and Education

Oak Ridge National Laboratory (ORNL)

Pacific Northwest National Laboratory (PNNL)

Princeton Plasma Physics Laboratory (PPPL)

SLAC National Accelerator Laboratory

Thomas Jefferson National Accelerator Facility

EMSs at DOE – Fossil Energy & PMAs

NUCLEAR EXECUTIVE LEADERSHIP TRAINING

Office of Fossil Energy

National Energy Technology Laboratory -- Pittsburgh & Morgantown

National Energy Technology Laboratory -- Albany Research Center (NETL-Albany)

Rocky Mountain Oilfield Testing Center (RMOTC)

Strategic Petroleum Reserve (SPR)

Power Marketing Administrations

Bonneville Power Administration (BPA)

Southwestern Power Administration (SWPA)

Western Area Power Administration

EMSs at DOE – Other Offices

NUCLEAR EXECUTIVE LEADERSHIP TRAINING

Office of Energy Efficiency and Renewables

National Renewable Energy Laboratory (NREL)

Office of Legacy Management

Office of Legacy Management (LM)

Office of Civilian Radioactive Waste Management

Yucca Mountain – DOE Operations

Office of Nuclear Energy

Idaho National Laboratory (INL)

Office of Management and Administration

DOE Headquarters Facilities

NUCLEAR EXECUTIVE LEADERSHIP TRAINING

Backup Slides –

DOE Sites Identified as "Significant Non-Compliers"

Current EM "Significant Non-Compliers" as of July 2009

NUCLEAR EXECUTIVE LEADERSHIP TRAINING

- **ETTP** (4 RCRA) has been designated as a current SNC since February 13, 2006.*
  - Generator Violations – General (2) February 13, 2006. Closed April 22, 2008.
  - Land Disposal Restriction Violations - General (2) February 13, 2006. Closed April 22, 2008.
  - No ongoing violations are indicated for the most recent quarter (July-September 2009), however the site is still listed as a SNC for RCRA.

***ETTP is working with the state to resolve the listing, and expects the SNC designation to be removed**

Current EM "Significant Non-Compliers" as of July 2009 (continued)

NUCLEAR EXECUTIVE LEADERSHIP TRAINING

Hanford (9 RCRA) has been designated as a current SNC since July 14, 2006.

- TSD Violation - Manifest/Records/Reporting (1) since July 14, 2006.
- Generator Violation - General (1) since September 18, 2006.
- TSD Violations - Tank System Standards (2) since March 28, 2007.
- Universal Waste Violations - Large Quantity Handlers (4) since March 3, 2009.
- TSD IS Violation – General (1) since April 14, 2009.
- CERCLA Violation of Section 109 Order fine of $30,800 issued June 2, 2008.

Current EM "Significant Non-Compliers" as of July 2009 (continued)

NUCLEAR EXECUTIVE LEADERSHIP TRAINING

Paducah (1 CWA) has been designated as a current SNC since the October-December 2008 quarter.

- Total Suspended Solids exceeded permit limits (1) since the October-December 2008 quarter.

Current EM "Significant Non-Compliers" as of July 2009 (continued)

NUCLEAR EXECUTIVE LEADERSHIP TRAINING

- **Portsmouth** (2 RCRA) has been designated as a current SNC since the January-March 2009 quarter.
  - State Statute or Regulation Violation (1) since the January-March 2009 quarter.
  - Generator Violation - General (1) since the January-March 2009 quarter.
- **Portsmouth** (1 CWA) has been designated as a current SNC since August 2008.
  - Compliance Schedule Not Received (1) since August 2008.

Current EM "Significant Non-Compliers" as of July 2009 (continued)

NUCLEAR EXECUTIVE LEADERSHIP TRAINING

Savannah River (1 CWA) has been designated as a current SNC since the July-September 2008 quarter.

- Non-Receipt of Discharge Monitoring Report (1) since the July-September 2008 quarter.
- On January 20, 2009, SRS was issued a Formal Enforcement Action and fined $6,500 for violations of the CAA State Implementation Plan (SIP) for four consecutive quarters.

Current EM "Significant Non-Compliers" as of July 2009 (continued)

NUCLEAR EXECUTIVE LEADERSHIP TRAINING

WIPP (1 RCRA) has been designated as a current SNC since the October-December 2007 quarter.

- Permit Condition or Requirement Violation (1) since the October-December 2007 quarter.
- On May 15, 2009, WIPP was issued a Formal Enforcement Action and fined $4,368 for violations under RCRA.

Current NNSA "Significant Non-Compliers" as of July 2009

NUCLEAR EXECUTIVE LEADERSHIP TRAINING

LANL (4 RCRA) has been designated as a current SNC since May 2, 2002.

- Permits Violation – Conditions (1) since May 2, 2002.
- Formal Enforcement Agreement or Order (1) since August 26, 2008.
- Formal Enforcement Agreement or Order (1) since September 26, 2008.
- Formal Enforcement Agreement or Order (1) since February 25, 2009.
- On June 24, 2008, August 20, 2008, and May 22, 2009, LANL was issued a Formal Enforcement Action and fined $291, $49,622, and $126,000, respectively, for violations under RCRA.

Current NNSA "Significant Non-Compliers" as of July 2009 (cont'd)

Nuclear Executive Leadership Training

- **Y-12** (2 RCRA) has been designated as a current SNC since November 7, 2005.
  - LDR Violation – General (1) November 7, 2005. Closed February 26, 2008.
  - TSD Violation – General Facility Standards (1) November 7, 2005. Closed February 26, 2008.
  - No ongoing violations are indicated for the most recent quarter (July-September 2009), however the site is still listed as a SNC for RCRA.
- **Y-12** (1 CWA) has been designated as a current SNC since the July-September 2007 quarter.
  - Non-Receipt of Discharge Monitoring Report (1) since the July-September 2007 quarter.

Summary of Fines "Significant Non-Compliers" as of July 2009

Nuclear Executive Leadership Training

Savannah River (CAA)		**$6,500**
WIPP (RCRA)		**$4,368**
LANL (RCRA)		**$291**
(RCRA)		**$49,622**
(RCRA)		**$126,000**
Hanford (CERCLA)		**$30,800**
	Total	**$217,581**

National Environmental Policy Act (NEPA) Compliance

Eric Cohen

Outline

A. Overview of National Environmental Policy Act (NEPA)

B. How to Manage a Successful NEPA Program

C. Making Decisions under NEPA

D. Discussion: Using NEPA to Accomplish DOE Missions

Overview: NEPA

NUCLEAR EXECUTIVE LEADERSHIP TRAINING

Basic national charter for protection of the environment

- policy goals
- procedural requirements
- established Council on Environmental Quality

Purpose = Better Decisions

How to Manage a Successful NEPA Program

NUCLEAR EXECUTIVE LEADERSHIP TRAINING

1. Learn Basic NEPA Principles
2. Plan Ahead and Stay Involved
3. Engage Public and Cooperating Agencies
4. Use Available Guidance and Resources

Basic NEPA Principles

- **Full disclosure/public participation**
  - Better decision making based on:
    - Understanding of alternatives and environmental impacts
    - Public input and scrutiny
    - Expert review and comment
- **Explore all reasonable alternatives**
  - "Heart" of the NEPA process
  - Rigorous, objective evaluation
  - Include No Action

Basic NEPA Principles (cont.)

- **Assess environmental impacts**
  - Level of analysis commensurate with significance of impacts/issue
  - "Reasonably foreseeable" impacts include low-probability, high-consequence accidents
- **Consider mitigation**
  - Ways to reduce/avoid impacts
- **Weigh options/explain decisions**
  - Balance environmental/technical/cost and other considerations
  - Need not select environmentally "best" alternative

Basic NEPA Principles (cont.)

NUCLEAR EXECUTIVE LEADERSHIP TRAINING

Three levels of NEPA review

1. **Categorical Exclusion (CX)**
   - Class of action listed in DOE Regulations
   - Must not involve "extraordinary circumstances"
2. **Environmental Assessment (EA)** — brief analysis if need for EIS is unclear
   - Finding of No Significant Impact (FONSI)
   - Decision to prepare an EIS
3. **Environmental Impact Statement (EIS)** — if environmental impacts may be significant

Plan Ahead/Stay Involved

NUCLEAR EXECUTIVE LEADERSHIP TRAINING

- **Annual Planning Summary**
  - Senior management involvement in NEPA planning process
  - Allocation of adequate resources to enable timely compliance
- **Monthly EA/EIS Status Chart, Key EIS Schedules**

Plan Ahead/Stay Involved (cont)

NUCLEAR EXECUTIVE LEADERSHIP TRAINING

- **NEPA Compliance Officers**
  - Make CX determinations
  - NEPA expertise/policy within programs
- **NEPA Document Managers**
  - Need project management and public participation skills, plus NEPA knowledge
  - Need access to senior management
- **Management/Executive Councils**
  - Useful for large, complex EISs

Engage Public and Cooperating Agencies

NUCLEAR EXECUTIVE LEADERSHIP TRAINING

- **Early scoping of issues and impacts**
  - Actively seek input to build credibility
  - Controversy may be a guide to sliding scale
- **Streamline interagency reviews**
  - Memorandum of Understanding to facilitate cooperating agency participation

Engage Public and Cooperating Agencies (cont.)

NUCLEAR EXECUTIVE LEADERSHIP TRAINING

- **Responsible Opposing Views**
  - Reflect all major points of view
  - Address uncertainty and unavailable information
  - Respond appropriately to comments

Use Available Guidance and Resources

NUCLEAR EXECUTIVE LEADERSHIP TRAINING

- **Website —** www.gc.energy.gov/NEPA/
- **Two-Volume NEPA Compliance Guide**
  - Regulatory requirements
  - Extensive guidance
- **Lessons Learned Program**
  - Cost, time, and effectiveness data
  - Case studies, mini-guidance, training opportunities
- **Corporate expertise/experience**:
  - Office of NEPA Policy and Compliance, (202) 586-4600

Making Decisions under NEPA

- Selecting a Preferred Alternative(s)
- Environmentally Preferable Alternative
- Mitigation
- Amending Decisions

Selecting a Preferred Alternative

- Must be identified in a Draft EIS, if one exists
- If none identified in a Draft EIS, EPA will rate all alternatives
- Required in a Final EIS
- Separate Notice of Preferred Alternative

Environmentally Preferable Alternative

NUCLEAR EXECUTIVE LEADERSHIP TRAINING

- NEPA does not require Agency to select the environmentally preferred alternative.
- However, if not selected, Agency must explain why not in Record of Decision.
- State whether all practicable means to avoid or minimize harm have been adopted; if not, why not.

Mitigation

NUCLEAR EXECUTIVE LEADERSHIP TRAINING

- **How**:
  - Avoid the impact altogether (pollution prevention)
  - Minimize impact
  - Rectify impact by repair, rehabilitation
  - Reduce or eliminate impact over time
  - Compensate for impact by replacement
- **Mitigation Action Plan for ROD commitments**
- **Annual Mitigation Monitoring Report**

Amending Decisions

- **If proposed action is covered** in existing EIS, simply publish an amended ROD.
- **If there is significant new information or substantial change** in the proposed action bearing on environmental impacts, Supplemental EIS is required.
- **Supplement Analysis (SA**) is a DOE vehicle for determining if a Supplemental EIS is needed.

Discussion: Using NEPA to Accomplish DOE Missions

- NEPA is a decision-making tool, not just another hurdle.
- DOE has an excellent NEPA track record.
- We get into trouble when we start late and try to cut corners. Litigation is costly and time consuming.
- Good NEPA compliance builds DOE credibility; enables DOE to accomplish its mission.

Discussion: Using NEPA to Accomplish DOE Missions (cont.)

- Current NEPA Issues
  - American Recovery and Reinvestment Act (Recovery Act)
  - Terrorism/Intentional Destructive Acts
    - Interim Guidance (Dec. 2006)
  - Global Climate Change/Greenhouse Gas Emissions

Discussion: Current NEPA Issues (cont.)

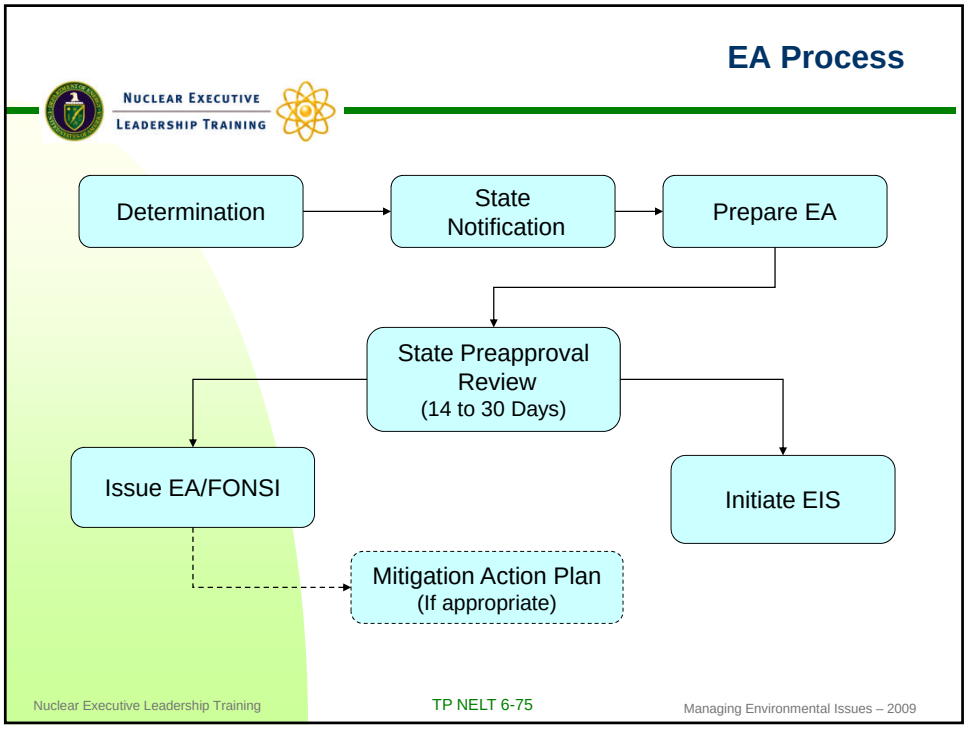
- Recovery Act
  - "Adequate resources … must be devoted to ensuring environmental reviews under [NEPA] are completed on an expeditious basis and that the shortest applicable process … shall be utilized" (section 1609(b)).
  - Significant increase in number of NEPA reviews
    - Anticipate mostly CXs (perhaps doubling DOE's annual rate to about 4000); some EAs and EISs
  - Time urgency prompting hard look at improving NEPA process efficiency
    - New GC-1 EIS review procedures
    - NCO volunteers

Backup Slides

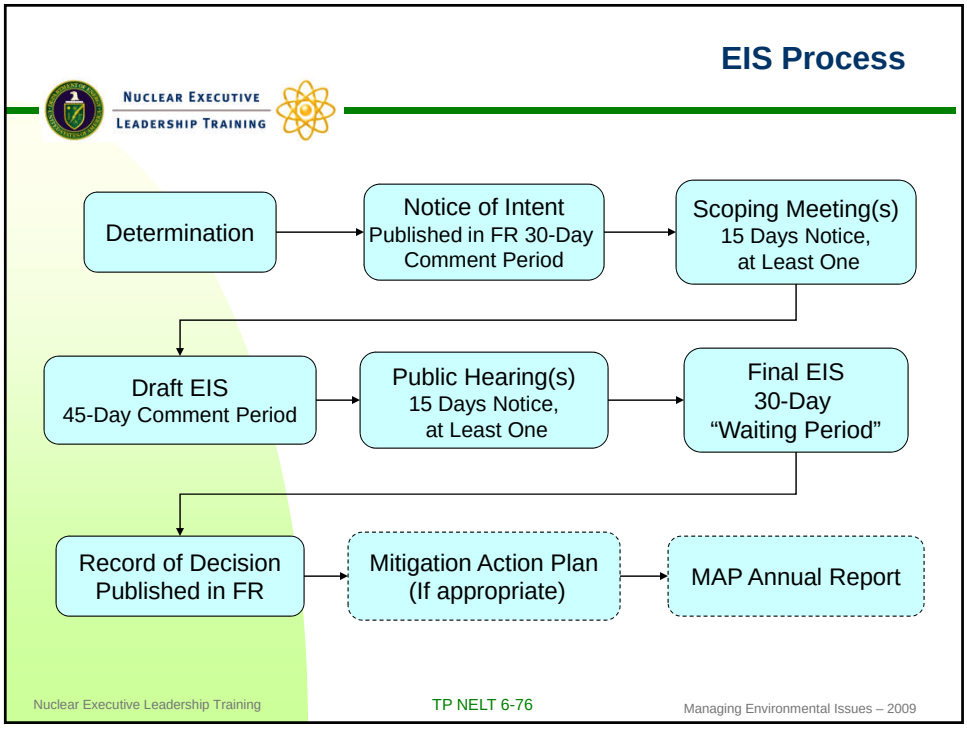
Basic NEPA Process

- Council on Environmental Quality Regulations (40 CFR Parts 1500-1508)
- DOE NEPA Regulations (10 CFR Part 1021)
- DOE Order 451.1B, NEPA Compliance
- Substantial Case Law

EA Process



EIS Process



DOE NEPA Authorities: DOE Order 451.1B

Nuclear Executive Leadership Training

- **Applicability:** Order applies to all DOE elements, including NNSA (modified)
- **Purpose:** Establishes internal requirements and responsibilities for implementing NEPA, CEQ regulations and DOE regulations
- **Goal:** Ensure efficient and effective implementation through teamwork; control cost and time while maintaining quality

NEPA Approval Authorities*

Nuclear Executive Leadership Training

Document Type	Approval Authority**	Other Program Roles
Notice of Intent to Prepare EIS	GC-1	PSO – request approval GC-20 – concur GC-51 – concur
Draft and Final EIS	GC-1	PSO – request approval GC-20 – recommend approval GC-51 – concur
Record of Decision for EIS	PSO	GC-20 – concur (for environmental content) GC-51 – concur GC-1 – concur
Supplement Analysis	PSO or Head of Field Organization	Headquarters or Field Counsel – concur
Environmental Assessment	PSO or Head of Field Organization	Headquarters or Field Counsel – concur
Categorical Exclusion Determination	NEPA Compliance Officers (program or field)	None required

Key
GC-1: Office of the General Counsel
PSO: Program Secretarial Officer
GC-20: Office of NEPA Policy and Compliance
GC-51: Assistant General Counsel for Environment

*Based on DOE Order 451.1B.

**NNSA-1, after consultation with GC-1, approves EISs that do not warrant S-1 attention.

NUCLEAR EXECUTIVE LEADERSHIP TRAINING

DOE EIS Costs and Schedules, 8/99 – 7/09

EIS Costs and Schedules (67 EISs)

	Cost	Time
Mean	$4.4 million	32 months
Median	$1.6 million	29 months
Range	$56,000 (BPA) – $44 million (Yucca)	9 months (WAPA) – 99 months (WAPA)

NUCLEAR EXECUTIVE LEADERSHIP TRAINING

DOE EIS Costs and Schedules, 8/99 – 7/09

Programmatic EIS Costs and Schedules (13 PEISs)

	Cost	Time
Mean	$8.3 million	45 months
Median	$4.0 million	36 months
Range	$56,000 (BPA) – $44 million (Yucca)	15 months (Nuclear Infrastructure) – 99 months (WAPA)

Project-Specific EIS Costs and Schedules (54 project-specific EISs)

	Cost	Time
Mean	$3.0 million	28 months
Median	$1.3 million	26 months
Range	$440,000 (BPA) – $18.2 million (Yucca)	9 months (WAPA) – 76 months (Hanford Waste)

DOE EA Costs and Schedules, 8/99 – 7/09

EA Costs and Schedules (263 EAs)

	Cost	Time
Mean	$105,000	14 months
Median	$77,000	9 months
Range	$3,000 (BPA) – $633,000 (WAPA)	0.2 months (NETL) – 96 months (Idaho Operations Office)

U.S. Department of Energy Radiation Protection of the Public and Environment & Radiological Control and Clearance of Property

Andrew Wallo, HS-20
Office of Nuclear Safety, Quality Assurance and Environment

Goals of Session

NUCLEAR EXECUTIVE LEADERSHIP TRAINING

- General understanding of DOE radiation protection requirements for protection of the public
- More specific understanding of DOE radiation protection property control and clearance requirements
- Understanding who is the regulator

Who is the Regulator?

NUCLEAR EXECUTIVE LEADERSHIP TRAINING

Insert your name here: _____

Who is the Regulator? (cont.)

NUCLEAR EXECUTIVE LEADERSHIP TRAINING

- DOE is self regulating in radiation protection areas.
- Line management **is** responsible for ensuring DOE and its contractors meet these requirements.
  - ensure implementation
  - verify compliance
  - enforce requirements through contracts
  - may not delegate this responsibility to a non-DOE entity

DOE Regulatory System

NUCLEAR EXECUTIVE LEADERSHIP TRAINING

Line management

- Implements health, safety and environmental protection,
- Oversees DOE and contractor implementation,
- Verifies compliance and
- Enforces Order requirements through contracting.

HS-10 (worker) and
HS-20 (public/environment)

- develops and maintains directives (policy and orders or rules) and
- provides guidance, technical interpretations and tools and assists line as requested.

HS-30 tracks performance

HS-40 enforces Price-Anderson rules.

HS-64 (ES&H) and IG provides independent oversight.

DOE Directives, Radiation Protection of the Public and the Environment

NUCLEAR EXECUTIVE LEADERSHIP TRAINING

- Policy-DOE P 441.1, Department of Energy Radiological Health & Safety Policy
- Directive-Order DOE 5400.5, Radiation Protection of the Public and the Environment (DOE O 458.1 in process)
- Others
  - DOE O 450.1, General Environmental Protection
  - DOE P 454.1, Institutional Controls Policy
  - 10 CFR Part 835 (worker radiation protection)
  - DOE O&P 226.1 (oversight policy and Order)
  - DOE O 231.1 – reporting
  - DOE O 435.1 – waste management

DOE Radiation Protection of the Public and the Environment — Objectives

NUCLEAR EXECUTIVE LEADERSHIP TRAINING

- Protect the public and the environment
- Implement legally applicable standards
- Maintain doses as far below dose limits and constraints as is reasonably achievable (ALARA)
- Establish standards and requirements consistent with other national standards, and national and international radiation protection recommendations

Order DOE 5400.5, Radiation Protection of the Public and the Environment

Nuclear Executive Leadership Training

Based on:

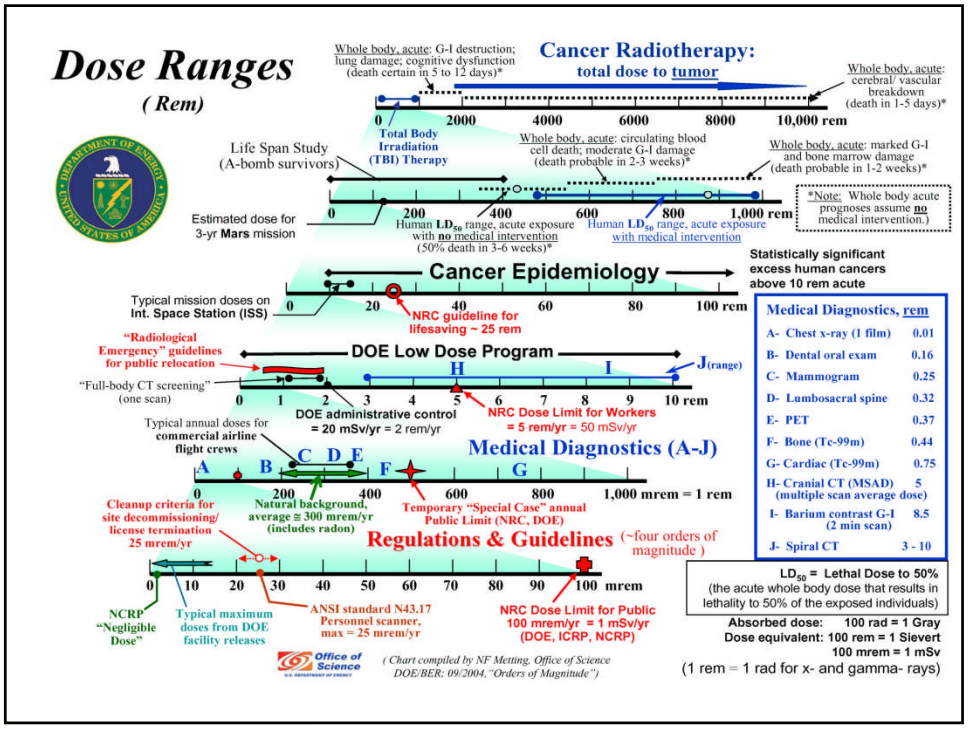
- National and International Principles of Radiation Protection:
  - Justification
  - Optimization
  - Dose limitation
- Federal Guidance
- Response to GAO, IG and DOE policies
- Field and Program feedback

Supported by accessible, useable guidance & tools

Order DOE 5400.5, Radiation Protection of the Public and the Environment (cont.)

Nuclear Executive Leadership Training

- Requires DOE operations to protect public and environment from undue exposure to radiation or radioactive material.
  - all sources, all pathways dose limit (100 mrem/y)
  - Dose to the lens (1,500 mrem/y), skin or extremities (5,000 mrem/y) [DOE O 458.1]
  - ALARA process (Optimization)
- Includes specific requirements for:
  - controlling wastes and liquid effluents
  - controlling air emissions and protecting drinking water systems
  - environmental protection and monitoring
  - **controlling and clearing property**



Control and Clearance of Property
Objective of Presentation

NUCLEAR EXECUTIVE LEADERSHIP TRAINING

Encourage the integration of property control and clearance needs into management systems

- Consider early
- Review periodically
- Confirm implementation
- Openly communicate and document

Principal Requirements for Control and Clearance of Property

- Survey or characterize radiological condition
- Evaluate dose
- Establish authorized limits with ALARA
- Document limits, radiological condition and any clearance conditions
- Verify and QA clearance process
- Keep public informed
- Maintain records and report property clearance

General Requirements for the Control and Release of DOE Property

ALARA dose constraints for clearances

- **Real property** is 25 mrem/yr, w/ goal of a few mrem/yr (actual or likely use)
- Contingency analysis (worst plausible use <100 mrem/y)
- **Personal property** expedited approval for <1mrem/yr and <10 person-rem
- Clearance at higher doses possible up to few mrem/yr should be for a restricted or specified clearance.

General Requirements for the Control and Release of DOE Property (cont.)

NUCLEAR EXECUTIVE LEADERSHIP TRAINING

ALARA constraints for clearances (continued)

- Use of surface activity guidelines for structures and personal property allowed (can be assumed consistent with dose-based constraints)
  - Change for DOE O 458.1 – Technical Standard rather than surface guidelines with volumetric limits (ANSI N13.12/IAEA RSG 1.7)
- Concentration limits provided for Ra-226 in soil and Rn-222 in structures (ALARA must be addressed)

Surface Activity Guidelines

NUCLEAR EXECUTIVE LEADERSHIP TRAINING

Allowable Total Residual Surface Activity (dpm/100 cm^2)

Radionuclides	Average	Maximum	Removable
Group 1 - Transuranics, I-125, I-129, Ac-227, Ra -226, Ra-228, Th-228, Th-230, Pa-231	100	300	20
Group 2 - Th-natural, Sr-90, I-126, I-131, I-133, Ra-223, Ra-224, U-232, Th-232	1000	3000	200
Group 3 - U-natural, U-235, U-238, and associated decay products, alpha emitters	5000	15000	1000
Group 4 - Beta-gamma emitters (radionuclides with decay modes other than alpha emission or spontaneous fission) except Sr-90 and others noted above	5000	15000	1000
Tritium (applicable to surface and subsurface)	N/A	N/A	10000

Recent DOE Property Release Limitation: Scrap Metal

NUCLEAR EXECUTIVE LEADERSHIP TRAINING

- Secretarial moratorium — release of volumetrically contaminated metal (January 2000)
  - Metal with/potential for volumetric residual activity
  - Then, no release into commerce
- Secretarial suspension — recycle of scrap metal (July 2000, modified January 2001)
  - If scrap metal in radiological area (per 10 CFR 835)
  - Then, no release for recycle into commerce

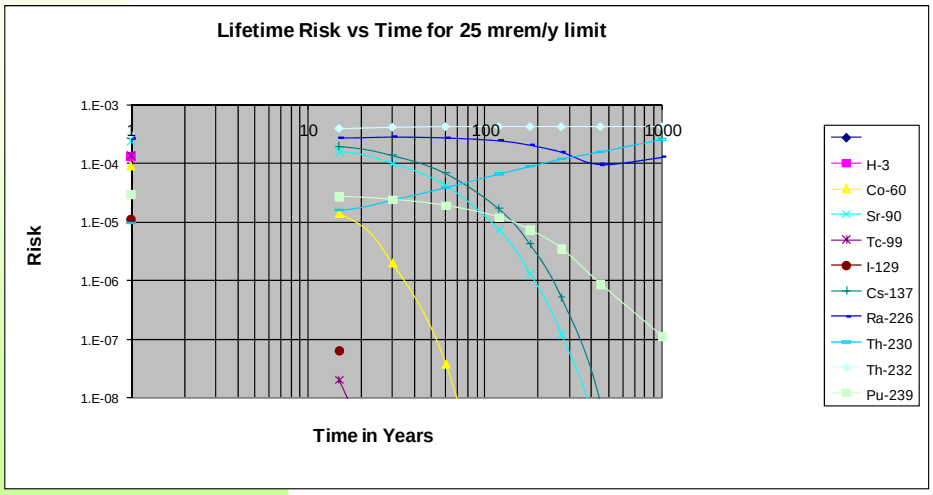
Primary Guidance and Tools

(http://www.hss.energy.gov/nuclearsafety/env/) **Under "Radiation Protection"**

NUCLEAR EXECUTIVE LEADERSHIP TRAINING

- Guide for "Control and Release of Property with Residual Radioactive Material," April 2002
- EH Guidance Memorandum, November 1995
- ALARA Guidance, Volumes 1 and 2
- Modeling Tools:
  - RESRAD-OFFSITE & ONSITE
  - RESRAD-BUILD
  - RESRAD-RECYCLE
  - TSD Dose
- Multi-Agency Radiation Survey and Assessment of Materials and Equipment Manual (MARSAME) & Multi-Agency Site Survey and Investigation Manual (MARSSIM)

Lifetime Risk vs. Time



Control and Release of Property with Residual Radioactive Material, DOE G 441.xx, April 2002

- DOE 5400.5 contains the flexibility to permit use of DOE approved Dose-Based authorized limits (clearance criteria)
- Guidance outlines processes for real property (lands and structures) and personal property
- Integrates policy memoranda with DOE 5400.5 requirements

Opportunities for Improving DOE Clearance Practices

- "There is a need to improve radiation monitoring, independent verification, and record keeping and reporting. We must also better engage the public in our decision making and help them better understand our release practices."
- "These steps are consistent with existing provisions of DOE Order 5400.5 and should be incorporated into your existing release programs."

Secretary of Energy
January 19, 2001

Specific Areas

- Greater attention to process knowledge
- Well-defined and documented control and release criteria
- Line management, in particular Field Offices, have the responsibility to ensure that contractors and DOE personnel comply with release requirements
  - Internally review property release and control systems
  - Appropriate independent verification

DOE Approvals for Dose-Based Authorized Limits

Action or Condition	Organization Approval
Authorized limits consistent with Surface Activity Guidelines	Review/approval by field offices in coordination with program offices.
Personal Property — Alternate dose-based limits where doses < 1 mrem/y and 10 person-rem/y	Review/approval by field elements in coordination with program office. Mandatory submittal to HS-20, 45 working days prior to use. Limits considered approved if the field is not notified by HS-20 within 30 working days following receipt of request.
Personal Property — Alternate dose-based limits where doses < 25 mrem/y dose constraint but in excess of 1 mrem/y or 10 person-rem/y	Review/approval by field elements in coordination with program office. Mandatory submittal to HS-20 for HS-1 written approval (never been used for personal property).

(Table 3 and Chapter 6 of April 2002 guidance)

DOE Approvals for Dose-Based Authorized Limits (cont.)

Action or Condition	Organization Approval
Limits for open land (soil criteria). Does not include waste or soil-like wastes for disposal in a landfill or other disposition	Review/approval by DOE field elements in coordination with program offices. HS provides technical assistance upon request.
Approval of authorized limits for structures	Same as above for personal property, except that for surface activity on structures, submittal to HS-20 is voluntary and HS-1 approval not required.
10 CFR Part 835 posting, access control.	Property cleared to DOE 5400.5 authorized limits excluded from 10 CFR Part 835 posting requirements if authorized limits are approved by DOE secretarial officer in consultation with the Chief Health, Safety and Security Officer.

(Table 3 and Chapter 6 of April 2002 guidance)

Revision to Part 835

NUCLEAR EXECUTIVE LEADERSHIP TRAINING

- Clarifying those requirements in 10 CFR part 835 which apply to radioactive material transportation;
- Excluding from the scope of 10 CFR part 835 material, equipment, and real property approved for release in accordance with DOE approved authorized limits which have been approved by a Secretarial Officer in consultation with the Chief Health, Safety and Security Officer;
- Updating the dosimetric models and dose terms to be consistent with newer recommendations from ICRP, including use of updated tissue and radiation weighting factors and updated derived air concentration (DAC) values; (DOE O 458.1 will be consistent)

Revision to Part 835 (cont)

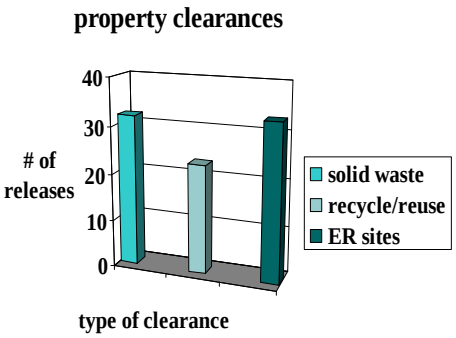
NUCLEAR EXECUTIVE LEADERSHIP TRAINING

- Establishing DAC values for Special Tritium Compounds (STCs);
- Lowering the maximum amount of radioactive material which need not be labeled;
- Allowing use of thresholds for recording occupational exposures;
- Establishing DAC default values for radionuclides not listed in the rule; and
- Revising values in Appendix E to be consistent with newer dosimetric models and adding values for STCs.

Summary – Property Release Actions

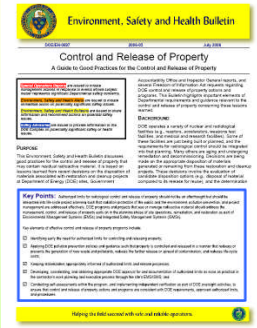
NUCLEAR EXECUTIVE LEADERSHIP TRAINING

- HS reviews for volumetric and dose-based-ALARA personal property
- Most clearances use Surface Guidelines
- Real property approved by program and field



A Guide to Good Practices for the Control and Release of Property

NUCLEAR EXECUTIVE LEADERSHIP TRAINING


Environment, Safety and Health Bulletin

Control and Release of Property

A Guide to Good Practices for the Control and Release of Property

Authorized limits should not be an afterthought but should be integrated into life-cycle project planning.

Key elements include:

- Identifying needed authorized limits early;
- Applying DOE pollution prevention policies and guidance such that property is controlled and cleared in a manner that reduces or prevents the generation of new waste and pollutants, reduces the further contamination, and reduces life-cycle costs;
- Keeping stakeholders appropriately informed of authorized limits and clearance processes;
- Developing, coordinating, and obtaining appropriate DOE approval for and documentation as soon as practical in the contractor's work planning and execution process; and
- Conducting self-assessments within the program, and implementing independent verification as part of DOE oversight activities.

DOE Regulatory Activities

- Update Order DOE 5400.5 to DOE O 458.1
  - Update to new radiation protection recommendations
  - Coordinate through Directives Review Board
  - Initiate RevCom review by end of the year
  - Issue guide on the control and clearance of property
  - Begin consideration of Order Roll-Out Plan
  - Issue necessary guidance or technical standards:
    - Issue ALARA guidance and 441.xx in final
    - Update and revise guide DOE/EH-0173T, "Effluent Monitoring & Environmental Surveillance"
    - Derived Concentration Guidelines (DCGs) [new-draft stage]
    - Surface Activity Guidelines [new- draft stage]
- Proposed 10 CFR Part 834

Summary

HSS staff are available to help the field **comply** with DOE Order requirements and use of alternative dose-based authorized/supplemental limits.

- Gustavo Vazquez, 202-586-7629 gustavo.vazquez@hq.doe.gov
- Amanda Anderson, 202-586-9144 amanda.anderson@hq.doe.gov
- Edward Regnier, 202-586-5027 edward.regnier@hq.doe.gov
- Colleen Ostrowski, 202-586-4997 colleen.ostrowski@hq.doe.gov